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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NELSON, ALECIA DIANE

ART UNIT

PAPER NUMBER

2675

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/836,719

Applicant(s)

KIMURA ET AL.

Examiner

Alecia D. Nelson

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3, 6, 9, 14, 17, 20, 23 and 27 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 5, 7, 8, 10-13, 15, 16, 18, 19, 21, 22 and 24-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The references listed on the information disclosure statements (IDS) submitted on 4/17/01 and 6/03/02 have been considered by the examiner.

Claim Objections

3. The claims are objected to because they include reference characters, which are not enclosed within parentheses.

Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. See MPEP § 608.01(m).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 1, 2, 4, 5, 7, 5, 12, 13, 15, 16, 18, 19, 21, 22, 25, 26** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 2, 12, and 13 recite a apparatus/method wherein "in the case where an address period (T_{am}) of a sub-frame period SF_m overlaps with an address period (T_{am+1}) of a sub-frame (SF_{m+1}), a clear period (TC_m) is provided which starts upon completion of a sustain period (T_{sm}) of the sub-frame period (SF_m) and ends upon start of the address period (T_{am+1})." However, this limitation fails to particularly point out and distinctly claim the subject matter which applicant regards as the invention according to the specification and specifically Figure 1. According to Figure1, there does not exist a case wherein the address period of one sub-frame overlaps an address period of the next sub-frame. IN the first two sub-frames (T_{a1} - T_{a2}) the address period overlaps with sustain periods (T_{s1} , T_{s2}), however the address period of the first frame does not overlap with the address period of the second frame. The same relation applies for the second and third sub-frames. Therefore there does not exist a case wherein the address period of one sub-frame overlaps an address period of the next sub-frame. According to what is claimed, the system is capable of going back to the pervious sub-frame (SF_m) to insert a clear period (TC_m) after the completion of the sustaining period (T_{sm}) once it is realized by the system in sub-frame (SF_{m+1}) that the address period (T_{am}) has overlapped with the address period (T_{am+1}) of sub-frame period (SF_{m+1}). However, accordingly to what is described in the specification and shown in Figure 1, it appears as if when the system realizes that the sustain period has

ended before the address period of sub-frame (SFm), a clear period is provided as a type of delay to prevent the address period from overlapping with the address period of the next sub-frame. **Claims 4, 5, 7, 8, 15, 16, 18, 19, 21, 22, 25 and 26** are rejected for being dependent on a rejected base claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. ***Claims 10, 11, and 24*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo (JP 2000-347621).

With reference to **claims 10 and 11**, Kondo teaches an electronic device comprising a source signal line side driver circuit (22) a gate signal line side driver

circuit (23) and a pixel portion wherein the pixel portion has a plurality of source signal lines (18), a plurality of gate signal lines (19), a plurality of current supply lines (13), a plurality of capacitor storage lines (14), and a plurality of pixels (12); each of the plurality of pixels has a switching transistor (17), an EL driving transistor (15), a capacitor storage (16), and an EL element (12); the switching transistor (17) has a gate electrode electrically connected to the gate signal lines (see page 32, lines 15-17); the switching transistor has a source region and a drain region one of which is electrically connected to the source signal line and the other of which is electrically connected to a gate electrode of the EL driving transistor (see page 32, lines 15-17, Fig. 1); and the EL driving transistor (15) has a source region and a drain region one of which is electrically connected to the current supply line (13) and the other of which is electrically connected to one electrode of the EL element (12) (see Fig. 1).

Kondo fails to specifically teach the usage of a capacitor storage line driving circuit, a plurality of capacitor storage lines, or that the capacitor storage has an electrode electrically connected to the capacitor storage line and has another electrode electrically connected to the gate electrode of the EL driving transistor as recited in the claims. However, it is taught by Kondo, a holding capacitor (16), which is connected as a voltage holding means, wherein the holding capacitor (16) is connected to the grounding line (14), which could be considered as a driving circuit providing a potential to the holding capacitor (16). It is also taught that the capacitor storage (16) has an electrode electrically connected to the capacitor storage line (14) and has another

electrode electrically connected to the gate electrode of the EL driving transistor (15) (see Fig. 1, page 33, lines 2-5).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow the holding capacitor of Kondo to carry out the functions of the capacitor storage as claimed in order to thereby provide an electronic device wherein an EL display is used as an image displaying device in a two dimensional arrangement in an active driving method wherein the data voltage is held by the holding capacitor is continued even though the operation of the switching TFT is controlled to be in a turned OFF by the scanning voltage. This makes the organic EL element continue lighting controlled to provide specified luminance until the next control to enable the EL display to display an image with high luminance and high contrast.

With reference to **claim 11**, Kondo teaches that the holding capacitor line (14) is electrically connected to the capacitor storage driving circuit (ground) so that a signal having amplitude is inputted to the capacitor storage line from the capacitor storage line driving circuit (see page 44-45, paragraph 85).

With reference to **claim 24**, Kondo teaches an EL display device (1) which is known to those skilled in the art as an image displaying device which displays a dot matrix image in a two dimensional arrangement. Such an image displaying device is for displaying various kinds of images in an area such as a passenger room of a vehicle where light and darkness are remarkably changed (see column 11, paragraph 2).

Allowable Subject Matter

8. ***Claims 3, 6, 9, 14, 17, 20, 23, and 27*** are allowed.
9. None of the references used singularly or in combination teach or fairly suggest a apparatus and method for driving an electronic device wherein in a certain sub-frame period (SFk), when the length of its address period is given as tak, the length of its sustain period as tsk, and the length of one gate signal line selecting period as tg, and $tak > tsk$ is satisfied, the length of SFk's clear period given as Tck always satisfies the expression of $tck \geq tak - (tsk + tg)$. The cited references teach the usage of an address period, sustain period, selecting period, and a clear (reset) period, however fail to teach the relation of the lengths of each period with regards to one another.

Conclusion


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alecia D. Nelson whose telephone number is (703)305-0143. The examiner can normally be reached on Monday-Friday 9:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras can be reached on (703)305-9720. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

Art Unit: 2675

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-9700.

adn/ADN
August 9, 2003



DENNIS-DOON CHOW
PRIMARY EXAMINER